embolism in patients with atrial fibrillation of non-rheumatical origin were compared. Patients could be included in PATAF (primary Prevention of Arterial Thrombo-embolism in patients with non-valvular Atrial Fibrillation in general practice) if they were over 60 years of age, and if (paroxysmal) atrial fibrillation was diagnosed by the general practitioner (GP). The diagnosis atrial fibrillation had to be confirmed by ECG. Screening of the population of the GP was done by checking the pulse of all patients older than 60 years during their visits to the general practitioner; at a later stage all patients who had not visited the GP since the start of the study were invited to have their pulse checked. Exclusion criteria for PATAF were: heart failure, valvular disease, prior TIA or CVA, contraindications to aspirin or oral anticoagulant therapy (OAC). Eligible patients were allocated to one of the following groups: 1) aspirin 150 mg daily; 2) OAC with INR between 2.5 and 3.5; 3) OAC with INR between 1.1 and 1.6. Patients older than 78 years and patients with a contraindication to OAC with INR 2.5 to 3.5 could be randomized between group 1 and 3. The main endpoint of the study (primary event) was defined as incidence of vascular death, stroke, systemic embolism, or major hemorrhage.

*Results:* In 275 general practices 1837 patients with atrial fibrillation were screened as candidates for PATAF. A total of 729 patients were randomized. Mean follow-up was 2.7 years. The primary event rate was 2% per year in the patients randomized between the three treatment groups. In the patients with a contraindication to OAC the primary event rate was 10% per year in the aspirin groep and the low dose OAC group. There were no significant differences between the treatment groups.

*Conclusion:* In this group of patients with non-valvular atrial fibrillation the annual incidence of thrombo-embolic complications was low, as well in the group of patients treated with aspirin as well as in patients treated with oral anticoagulant therapy.

## 1158 Clinical Electrocardiographic Body Surface Potential Therapy

Tuesday, March 31, 1998, 3:00 p.m.–5:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 3:00 p.m.–4:00 p.m.

### 1158-89 ECG Criteria for Prediction of the Site of Coronary Artery Occlusion in Inferior Wall Myocardial Infarction

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In patients with inferior wall myocardial infarction (IWMI), the culprit lesion is an important factor of the prognosis. Although patients with right ventricular (RV) infarction have a poor prognosis, those with occlusion of the left circumflex coronary artery (LCx) have a good prognosis. Therefore, we assessed whether the admission ECG could identify the culprit lesion, i.e., the proximal site to RV branch in the right coronary artery (RC-P), the distal site (RC-D) or LCx. The ratio of ST depression in lead V3 to ST elevation in lead III (V3/III) was evaluated on admission in 102 pts with a first IWMI documented by coronary angiography within 6 hrs from the symptom onset. For occlusion of RC-P, RC-D, LCx, V3/III was 0.2 ± 0.2, 0.8 ± 0.5, 1.9 ± 0.9 ($p < 0.01$), respectively. V3/III < 0.5 identified RC-P, 0.5 ≤ V3/III < 1.2 identified RC-D, and 1.2 ≤ V3/III identified LCx with a sensitivity of 95%, 81%, and 77%, and a specificity of 87%, 95%, and 97%, respectively.

| | RC-P | RC-D | LCx | (pts) |
|---|---|---|---|---|
| V3/III < 0.5 | 40* | 6 | 2 | 48 |
| 0.5 < V3/III < 1.2 | 2 | 38* | 1 | 41* |
| 1.2 < V3/III | 0 | 3 | 10* | 13 |
| | 42 | 47 | 13 | 102 |

*$p < 0.05$

In conclusion, V3/III is a useful ECG criteria to predict the site of coronary artery occlusion in IWMI.

### 1158-90 Body Surface Mapping: Early Diagnosis of Acute Myocardial Infarction Presenting With Non-diagnostic ECG Changes

I.B.A. Menown, R.S.H.W. Patterson, G. MacKenzie, A.A.J. Adgey. *Regional Medical Cardiology Centre, Royal Victoria Hospital, Belfast, UK*

*Background:* The 12 lead ECG is only 50% sensitive for the detection of acute myocardial infarction (AMI). The majority of leads for optimal classification of AMI probably lie outside the area covered by the 6 praecordial leads. Thus body surface mapping (BSM) may be more helpful as a larger thoracic area is sampled.

*Methods:* We recorded 64-lead anterior BSMs in 635 patients (pts) with chest pain suspicious of AMI and abnormal ECGs, and 125 controls. Of the 635 pts, 325 had AMI according to WHO criteria (264 ST-elevation, 61 non diagnostic ECG) and 310 had an 'abnormal ECG-not AMI'. QRS and ST-T *isointegrals and variables describing map shape* were derived. Subjects were randomly allocated to a *training* (T) set (63 controls, 321 pts) and a *validation* (V) set (62 controls, 314 pts). Multiple logistic regression was used in the Tset to identify which variables gave best discrimination between groups. A model with these variables was then tested prospectively in the Vset.

*Results: Stage 1* compared controls with pts. In the Tset, 21 variables classified 58/63 controls (specificity 92%) and 316/321 pts (sensitivity 98%). In the Vset, the model classified 48/62 controls (specificity 77.4%) and 302/314 pts (sensitivity 96%). *Stage 2* (pts only), compared AMI with abnormal ECG-notAMI. In the Tset, 28 variables classified 132/165 AMI (sensitivity 80%) and 134/156 abnormal ECG-notAMI (specificity 86%). In the Vset the model classified 123/160 AMI (sensitivity 77%) and 131/154 abnormal ECG-notAMI (specificity 85%). *Combining both stages* in a two-step algorithm gave an overall classification in the Tset of controls 92%, abnormal ECG-notAMI 84%, AMI 80% and in the Vset of controls 77%, abnormal ECG-notAMI 82%, AMI 74%.

*Conclusion:* Thus when compared with the 12 lead ECG, BSM results in higher sensitivity and specificity for detection of AMI, particularly in patients presenting with non-diagnostic ECG changes.

### 1158-91 Electrocardiographic Measures of Heterogeneity of Ventricular Repolarization

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*Background:* Although QT dispersion (QTd) on the 12-lead ECG correlates with dispersion of monophasic action potential duration at 90% repolarization ($APD_{90}$), total T-wave area, which represents a summation of vectors during this time interval, has the highest correlation with $APD_{90}$ dispersion. Moreover, recent studies suggest that the ratio of the second to first eigenvalues of the T-wave vector by principal component analysis (PCA ratio) may be a more accurate noninvasive measure of heterogeneity of ventricular repolarization.

*Methods:* To better characterize ECG measures of dispersion of repolarization, the relations of QRS onset to T-wave offset ($QT_od$) and to T-wave peak ($QT_pd$) dispersion and the PCA ratio to ECG variables were examined in 163 asymptomatic subjects with normal resting ECGs, normal LV mass, and normal LV function. $QT_od$ and $QT_pd$ were measured by computer from digitized ECGs as the difference between the maximum and minimum $QT_o$ and $QT_p$ intervals.

*Results:* In univariate analyses, there was a significant correlation between the sum of T-wave area and the PCA ratio ($r = -0.46$, $p < 0.001$), but not between the sum of T-wave area and $QT_od$ ($r = 0.11$, $p$ = ns) or $QT_pd$ ($r = 0.09$, $p$ = ns). There were only modest correlations between $QT_od$ and $QT_pd$ ($r = 0.45$) and between the PCA ratio and $QT_od$ ($r = 0.29$) and the PCA ratio and $QT_pd$ ($r = 0.49$) (each $p < 0.001$). The normal inter-lead dispersion of repolarization as measured by $QT_pd$ was significantly greater than dispersion measured by $QT_od$ (23.5 ± 11.5 ms vs 18.3 ± 11.2 ms, $p < 0.001$. In stepwise multivariate linear regression analyses, the PCA ratio was significantly related to the sum of T-wave area, T-wave amplitude in aVL, and to female gender (overall $r = 0.54$, $p < 0.001$).

*Conclusions:* There is significantly higher intrinsic normal variability of $QT_pd$ than $QT_od$ and only modest correlation between these two measures. The independent relation of PCA ratio to sum of T-wave area suggests that PCA ratio may be a better noninvasive measure of heterogeneity of repolarization.

### 1158-92 Value of the Selvester 32-point QRS-score After Acute Myocardial Infarction Treated With Primary Percutaneous Transluminal Coronary Angioplasty

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*Background:* The Selvester 32-point QRS score is a quantitative QRS scoring system to determine infarct size after acute myocardial infarction (AMI). It is quite accurate in patients not undergoing reperfusion therapy, but its value is questioned in patients receiving thrombolysis. Data for patients undergoing primary percutaneous transluminal coronary angioplasty (PTCA) are lacking.

*Methods:* We determined infarct size using the 32-point QRS score in 37 patients (mean age 54 years sd 12, 32 men) at 37 days sd 17 after their first AMI. All patients were succesfully treated with primary PTCA within 6 hours of onset of pain and TIMI flow 3 was obtained in 34 patients (92%). The ECG score was correlated with detect size derived from quantitative stress-rest 201-Thallium single-photon emission computed tomography (SPECT) at the same day, radionuclide ejection fraction (EF) at discharge and peak creatine kinase (peak CK).